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Dental care programme for Hong Kong secondary school students – parents' choices and willingness to pay

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Dental care programme for Hong Kong secondary school students – parents' choices and willingness to pay

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1. ABSTRACT

Aim: To investigate the parents' willingness to pay for a basic dental care plan for secondary school students in Hong Kong and the factors affecting their willingness to pay (WTP).

Methods: The target study group was parents of secondary school Form 2 and Form 5 students. Data were collected through the completion of a specially designed questionnaire by parents which was distributed through the selected schools. The questionnaire had four sections. The first section contained questions on the background of the student (year of study and gender) and the main socio-economic factors (parental education level and household income) which might affect the parents' oral health attitudes and WTP for the proposed dental care plans. The second and third sections asked about the dental visit behaviours of the child and the parents, respectively. The forth section contained questions on the parents' oral health attitudes, and their preferred contents of and WTP for the dental care plans.

Results: A total of 2,194 questionnaires were distributed in the eight participant schools and 1,500 (68.4%) completed questionnaires were collected. Most parents appreciated the importance of preventive dental care, with 66.8% of them giving a score of 8 or above out of 10. Over 75% of the parents thought their child needed to have regular dental visits. When the parents were asked to indicate their preference for the three proposed dental care plans, most (59.5%) of the parents chose Plan C (dental check-up, prevention, scaling, filling and extraction) as their first choice, followed by Plan B (dental check-up, prevention and scaling) and then Plan A (dental check-up and oral health education). The parents' income level did not affect their choices of a dental care plan but affected the monetary values that they were willing to pay for the dental plans. The median WTP values for plans A, B and C were HK$101, $214, and $270, respectively.

Conclusion: Most of the parents of secondary school children in Hong Kong consider preventive dental care very important. The parents' most preferred dental care plan for their children is one that contains both preventive and simple restorative care items, and their preference is not affected by their socio-economic background. The monetary values which the parents are willing to pay for a dental care plan increases with the number of dental service items included in the plan and also with the parents' income.

2. INTRODUCTION

A major public dental care service in Hong Kong is the School Dental Care Service (SDCS) for all the primary school children which is heavily subsidized by the government.[1] The SDCS was established in 1980. At present, the parent/guardians of the primary school students only needs to pay a nominal annual enrollment fee (HK$ 20 in 2013/14) and their child will receive all necessary basic preventive and curative dental care in the SDCS free of charge. The services such as annual dental check-up, prevention, scaling and dental restorations are mainly provided by dental therapists under the supervision of government dentists in eight large SDCS clinics located in different districts in Hong Kong.

After completing six years of education in primary school, the students in Hong Kong will enter into a secondary school in which they will study for another six years. The participation rate of the primary school students in the SDCS is around 90% and this may partly explain why the oral health status of the Hong Kong 12-year-old children is very good.[2] However, the SDCS does not cover secondary school students. It has been reported that once the students enter into secondary school, their attendance rate to the dentists greatly reduced and that the oral health conditions of the Hong Kong adolescents deteriorated over time till early adulthood.[3]

According to the findings of a recent oral health survey conducted by the Hong Kong government in 2011, only around one third of the 12-year-old children had visited a dentist after entering secondary school.[2] Despite this, the same survey also found that approximately 70% of the parents recognized the usefulness of dental checkup in the prevention of tooth decay and gum diseases, and that two thirds of the parents intended to bring their 12-year-old child to seek regular dental checkup. There seems to be a discrepancy between the parents' intention and their actual behavior. The question is why most of the secondary school students in Hong Kong do not visit a dentist regularly.

To have a better understanding of the above-mentioned discrepancy and to find out the common barriers of the Hong Kong secondary school students in seeking oral health care, a study is needed. Our group of dental students would also like to explore the possibility of developing a basic dental care plan for the secondary school students in Hong Kong. We

would like to investigate the parents' attitude towards and their preferred contents of the dental care plan, e.g. whether oral health education, prevention, scaling and dental restorations should be included.

Preventive care is an integral part of comprehensive dental care. Success in prevention of dental diseases could save a patient much money otherwise spent on treatment of diseases. However, it is hard to estimate the value of preventive care because its effects cannot be guaranteed. Therefore, changes in its demand cannot be simply explained by price-based models. Contingent valuation involves gauging the value of a certain resource which may be difficult to be priced. It commonly consists of willingness to pay (WTP) or willingness to accept (WTA).[4] Willingness to pay is a concept which explores the maximum amount of sacrifice (in this case referring to the amount of money) an individual is willing to make in order to acquire a certain good/service. While it is questionable whether the value of health can be expressed in monetary terms, WTP is a comprehensive way of economic evaluation as it directly measures the next-best opportunity an individual forgoes to acquire the treatment. It also addresses potential benefits to receiving preventive dental care, besides the obvious health gain.[5,6]

The parents' willingness to pay for the proposed dental care plan for Hong Kong secondary school students will be vital for its successful implementation. It is important to find out if the amount that the parents are willing to pay is affected by their socio-economic background and attitude towards oral health, and the contents of the dental care plan. Information on the attitude of the parents towards preventive dental care for their child and their acceptable price range will be very valuable for the promotion of the concept "prevention is better than cure".

It is likely that the local secondary school students in the junior and the senior years have different dental visit behaviours because the students in the junior years have recently had their dental check-up when they were in the SDCS while the students in the senior years had left the SDCS for quite some time. Their parents may also have different perceptions on the need for a dental care plan for their child.

3. AIMS AND OBJECTIVES

The main aims of this community health project were to investigate the parents' willingness to pay for a basic dental care plan for secondary school students in Hong Kong and the factors affecting their willingness to pay.

The objectives of this study were:

1. to describe the attitude of the parents/guardians of secondary school students towards the importance of having a dental care plan for their child and their preferred contents of the plan,
2. to report on the monetary values which the parents were willing to pay for dental care plans with different service contents; and
3. to identify the factors associated with the parents' willingness to pay.

4. MATERIALS AND METHODS

4.1. Sampling

The 18 secondary schools which were chosen randomly for participation in the 2001 Hong Kong Oral Health Survey by the government formed the basis of the sampling frame of schools in this study.[7] Due to less than satisfactory initial response from these schools, two more schools were added. The target was to include in this study three schools in each of the three main geographical areas of Hong Kong.

In each school, students studying in Form 2 and Form 5 were chosen to represent the junior and the senior year students. All of the parents/guardians of the selected students were invited to participate in this study.

4.2. Development of the data collection instrument

A custom-made questionnaire was developed to collect the required information from the parents in this study. Some parents and some private dentists were consulted in the process to ensure that the dental terms and questions could be easily understood by the target study subjects. The questionnaire used was bilingual, printed in both Chinese and English.

The first page of the questionnaire was a letter to the parents explaining to them the purpose of our study and assuring them that all information collected would be kept confidential and used for this study only. The questionnaire was anonymous and is attached as Appendix 1 to this report.

There were four sections in the questionnaire. The first section contained questions on the background of the selected student (year of study and gender) and the main socio-economic factors (parental education level and household income) which might affect the parents' oral health attitudes and WTP for the proposed dental care plans. The second and the third sections asked about the dental visit behaviours of the child and the parents, respectively. The forth section contained questions on the parents' oral health attitudes, and their preferred contents of and WTP for the dental care plans.

To assist the parents in completing the last section of the questionnaires, a brief description of preventive dental care was provided so that the parents would have a basic concept of the various preventive dental care items, including fissure sealant and topical fluoride application. The parents were then asked to choose the contents which they thought a dental care plan for secondary school students in Hong Kong should include. The parents' perceived importance of having a dental care plan for their child was measured by a 10-point numerical scale (1=least important; 10=most important). Three hierarchical dental care plans containing increasing numbers of dental service items were listed and the parents were asked to indicate the order of their preferences. The three dental care plans were:

(1) Plan A - check-up (with necessary radiographs) and oral health education (OHE)
(2) Plan B - check-up, OHE, scaling, fluoride application and fissure sealant
(3) Plan C - contents in Plan B with further addition of dental filling and tooth extraction.

Lastly, the parents were asked how much they were willing to pay for each of the three proposed dental care plans.

4.3. Data collection process

The selected secondary schools were contacted individually by letter and by phone to inform them of the purpose and the planned activities of our community health project and to ask for their approval t conduct the study in the school. Once the school authority agreed to participate, arrangements were made to visit the school by 3-4 members of our student group and to distribute the questionnaires to all the students studying in Form 2 and Form 5. Dental care products such as toothbrush, mouthrinse, floss and toothpaste were given as souvenirs to the school staff as an appreciation for their support. The students were promised a pack of dental care products upon return of the completed parental questionnaire.

The questionnaires were distributed to the students by the school and were completed by the students' parents/guardians at home. The students were instructed to return the completed questionnaires to the school. After the students had returned the questionnaires, a second visit to the school was arranged to collect the questionnaires and to deliver the dental care products for the students.

4.4. Reporting to the schools

After collection of the completed questionnaire, a thank you letter was sent to each participant school. The school was promised an individual report on the findings from the data collected from its students.

4.5. Data analysis

Data collected in the questionnaires were entered into a personal computer. Proofreading was performed and data entry errors were corrected. The cleaned data were analyzed using a statistical software (SPSS for Windows, version 20). Descriptive statistics such as frequency tables, and mean and standard deviation were generated. Bivariate data analysis such as cross tabulation table was performed and differences in distribution between groups were assessed using Chi-square test. The level of statistical significance for all tests was chosen to be 0.05.

5. RESULTS

5.1. Response

Eight secondary schools, two on Hong Kong Island, three in Kowloon and three in te New Territories participated in this study. Names of the participant schools can be found in Appendix 2.

A total of 2,194 questionnaires were distributed to the students in the eight schools and 1,500 completed questionnaires were collected. The response rate was thus 68.4%.

5.2. Background of the respondents

Among the 1,500 students who returned a completed questionnaire, 664 (44.3%) were studying in Form 2 while 836 (55.7%) were studying in Form 5. In terms of gender distribution, 635 (42.3%) of the students were male and 865 (57.7%) were female.

The demographic background of the respondents is summarized in Table 1. More than three quarters (78.0%) of the respondent parents had secondary school as their highest educational attainment, i.e. Form 7 or below. Only 13.1% of the parents had a university degree. There is more diversity of the respondents in term of their monthly household income. While slightly less than half (47.3%) of them were from households with an income of up to HK$20,000 a month, 12.9% of them were from high income households (>$40,000 a month).

Table 1. Socio-economic background of the respondents.

Background		Number	(%)
Education level of parents	Secondary school	1150	(78.0)
	Post-secondary	131	(8.9)
	University degree	193	(13.1)
Monthly household income	≤ $20,000	681	(47.3)
	$20001 – $40000	573	(39.8)
	≥ $40001	186	(12.9)

Results of a bivariate analysis show that the respondent's household income level correlated positively with their education level. For example, among the respondents who had a monthly household income ≤$20000, 92% had attained secondary school education while only 3% had university degrees. In contrast, among the respondents who had a monthly household income >$40000, 36% had attained secondary school education and 46% had university degrees. The association between parental education and household income was statistically significant (Chi-square test, $p<0.001$).

5.3. Dental visit behaviours of the respondents

Overall, more than half (55.1%) of the students had not visited a dentist after entering secondary school (Table 2). It was found that a higher proportion of the Form 5 students had visited a dentist after entering secondary school compared to the Form 2 students (50.8% vs. 37.5%, $p<0.001$).

Table 2. Distribution of the students according their dental visit history.

Year of study	Visited a dentist after entering sec. school			
	Yes		No	
	N	(%)	N	(%)
Form 2	249	(37.5)	415	(62.5)
Form 5	424	(50.8)	410	(49.2)
All students	673	(44.9)	825	(55.1)

Chi-square test, $p<0.001$

Table 3. Relationship between the student's dental visit history and household income.

Monthly household income	Visited a dentist after entering sec. school			
	Yes		No	
	N	(%)	N	(%)
≤ $20,000	237	(34.8)	444	(65.2)
$20001 – $40000	277	(48.4)	295	(51.6)
≥ $40001	137	(73.7)	49	(26.3)

Chi-square test, $p<0.001$

It was found that the student's household income could affect their dental visit behavior (Table 3). While only around one third (34.8%) of the students from the lowest household income group had visited a dentist after entering secondary school, close to three quarters (73.7%) of the students from the highest household income group did so (Chi-square test, $p<0.001$).

The three most common reasons for the students' last dental visits were dental cleaning (69.4%), dental check-up (53.4%) and dental fillings (15.6%). The three most commonly reported reasons for not having had a dental visit since entering secondary school were no need (43.1%), dental care being too expensive (39.5%) and no time (38.2%).

When asked whether they thought their child needed to have regular dental visits, around a quarter (23.6%) of the parents answered no while half (50.8%) replied that their child needed to visit a dentist once a year (Table 4).

Furthermore, it was found that the parents' own dental visit behavior was positively related to their view on their child's need to have regular dental visits. Over 90% of the parents who visited a dentist once a year thought that their child also needed to visit a dentist at least once a year. In contrast, one third (32.9%) of the parents who did not visit a dentist regularly thought their also did not need to visit a dentist regularly.

Table 4. Parent's view on their child's need for regular dental visits.

Need to visit a dentist regularly		Number	(%)
No		350	(23.6)
Yes	once every 2 year	186	(12.5)
	once every year	755	(50.8)
	2 times a year	143	(9.6)
	>2 times a year	51	(3.4)

5.4. Dental care plan

When the parents were asked how important they thought preventive dental care was, the majority (84.4%) gave a score of 7 or above (out of 10) and less than 2% of the parents gave a score below 5. In fact, one third (33.6%) of the parent gave the maximum score of 10. Overall, the mean score was 8.2 and the standard deviation was 1.7. There were no statistically significant differences ($p>0.05$) between the mean scores of the parents with different household income.

Regarding the dental service items to be included in the dental care plan, nearly all (97.8%) of the parents wanted to include dental check-up. Most of the parents wanted to include scaling (84.6%), fluoride application (66.2%), and dental filling (57.9%). Fissure sealant and oral health education were chosen by half of the parents. On the contrary, only slightly more than one third (35.3%) of the parents indicated that tooth extraction should be included. Other dental care items such as orthodontics, bleaching of teeth, and root canal treatment were chosen by only a few percent of the parents.

When the parents were asked to indicate their preference for the three proposed dental care plans, most (59.5%) of the parents chose Plan C (dental check-up, prevention, scaling, filling and extraction) as their first choice. Around one third (32.5%) of the parents chose Plan B (dental check-up, prevention and scaling) and the remaining 8.0% of the parents chose Plan A (dental check-up and oral health education).

Plan B was the preferred second choice for most (63.7%) of the parents, followed by Plan C (24.5%) and Plan A (11.8%). Plan A was the least preferred option with the majority (80.3%) of the parents placing it as their last choice. When asked to design the content of a suitable dental care plan for Hong Kong secondary school students, 15.5% of the parents chose components identical to Plan C.

No statistically significant association was found between the parents' preference for the dental care plans and their household income level. Despite differences in income levels among the parents, when asked to rank their choices of the three proposed dental care plans, their choices remain similar across the board — C, B, A in decreasing order. Furthermore, the proportions of parents who chose Plan C as their first choice remained similar across the

three income groups, 55.4%, 56.9% and 53.3% in the high, middle and low income groups, respectively ($p>0.05$).

5.5. Willingness to pay

In general, the amount which the parents were willing to pay for a dental care plan increased with the number of dental service items included in the plan (Table 5). For Plan A, most (73.9%) of the parents were only willing to pay up to $150. For Plans B and C, more than half of the parents were willing to pay up to $300.

The median fee that the respondents were willing to pay for Plans A, B and C were $101, $214 and $270, respectively. There was a 112% increase in the median amount which the parents were willing to pay when changing from Plan A to Plan B, i.e. with the addition of three dental service items: scaling, fluoride application, and fissure sealant. With a further addition of dental filling and tooth extraction, i.e. changing from Plan B to Plan C, the further increase in the median amount was only 26%.

Table 5. Amount the parents were willing to pay for the three dental care plans.

Amount willing to pay (HK$)	Plan A		Plan B		Plan C	
	N	(%)	N	(%)	N	(%)
≤ $150	1089	(73.9)	450	(30.7)	365	(24.8)
$151 - $300	270	(18.3)	675	(46.0)	467	(31.8)
$301 - $450	83	(5.6)	261	(17.8)	380	(25.9)
$451 - $600	21	(1.4)	62	(4.2)	184	(12.5)
≥ $601	11	(0.7)	20	(1.4)	73	(5.0)

Table 6. Amount the parents were willing to pay for Plan A according to the three household income groups.

Amount willing to pay (HK$)	Low income N	(%)	Middle income N	(%)	High income N	(%)
≤ $150	526	(79.0)	384	(67.8)	133	(71.5)
$151 - $300	93	(14.0)	133	(23.5)	39	(21.0)
$301 - $450	34	(5.1)	38	(6.7)	6	(3.2)
$451 - $600	10	(1.5)	8	(1.4)	3	(1.6)
≥ $601	3	(0.5)	3	(0.5)	5	(2.7)

Chi-square test, p<0.001

Table 7. Amount the parents were willing to pay for Plan B according to the three household income groups.

Amount willing to pay (HK$)	Low income N	(%)	Middle income N	(%)	High income N	(%)
≤ $150	259	(39.2)	128	(22.7)	39	(21.0)
$151 - $300	280	(42.4)	288	(51.1)	87	(46.8)
$301 - $450	92	(13.9)	114	(20.2)	46	(24.7)
$451 - $600	25	(3.8)	29	(5.1)	6	(3.2)
≥ $601	5	(0.8)	5	(0.9)	8	(4.3)

Chi-square test, p<0.001

Table 8. Amount the parents were willing to pay for Plan C according to the three household income groups.

Amount willing to pay (HK$)	Low income N	(%)	Middle income N	(%)	High income N	(%)
≤ $150	223	(33.6)	99	(17.6)	24	(12.9)
$151 - $300	219	(33.0)	183	(32.5)	47	(25.3)
$301 - $450	138	(20.8)	164	(29.1)	65	(34.9)
$451 - $600	61	(9.2)	84	(14.9)	37	(19.9)
≥ $601	23	(3.5)	33	(5.9)	13	(7.0)

Chi-square test, p<0.001

For Plan A, over two thirds of the parents in any of the three household income groups (≤$20000, $20001-40000 and ≥$40001 per month) were only willing to pay up to $150 (Table 6). Less than 10% of the parents in any of the income groups were willing to pay more than $300.

The effect of income on the amount which the parents were willingness to pay for a dental care plan is more obvious for Plan B (Table 7). While most (82%) of the parents in the low income group were willing to pay up to $300, three quarters of the parents in the middle and also in the high income groups were willing to pay up to $301-450 (chi-square test, $p<0.001$). A similar pattern is also seen for Plan C (Table 8).

6. DISCUSSION

6.1. Sample selection and response rate

In order to have a better comparison of our study results with those from previous oral health surveys in Hong Kong, we decided to invite the secondary schools which had participated in the 2001 oral health survey conducted by the government.[7] Since these schools were selected randomly from all schools in Hong Kong in the previous survey, they should be able to represent the other schools. Furthermore, we expected that these schools would be easier to approach since they had participated in a previous survey. We were aware that not every school would respond and therefore we aimed at having around half of them participate. Due to non-response from some of the initially invited schools, two other schools in the same area were selected as substitutes. In the end, 8 schools participated in this study, with 3 schools in the New Territories, 3 schools in Kowloon and 2 schools in Hong Kong Island, respectively. This distribution of participant schools roughly corresponds to how the population in Hong Kong is distributed, thus lowering the risk of bias due to the study sample being different from the population in term of geographical distribution.

A large sample size would be preferred so as to have adequate sample sizes for sub-group analysis. However, given the amount of manpower we had (nine students in our group), it was necessary to aim at a sample size which we would be able to manage because of the vast amount of data to be handled. Thus, we decided to survey all Form 2 and Form 5 students rather than surveying all students in the selected schools. Given that the Form 2 students had only recently stopped benefitting from the School Dental Care Service (SDCS), we decided that they should be one of the target groups. Since the Form 6 students would be busy preparing for their public examinations, we decided to survey the Form 5 students as they had left the SDCS for more than four years. Our expectation was that the parents of the Form 5 students would be more willing to take their child to visit a dentist.

At the end of this study, we were able to collect a total of 1500 completed questionnaires and the response rate was nearly 70%. This response rate can be regarded as satisfactory and is comparable to that of a previous questionnaire survey on secondary school dental care scheme conducted in Hong Kong in 2009.[8] The sample size in this study is much large than that in the previous survey. The good support provided by the school teachers in the

distribution and collection of the questionnaires is very important for the successful implementation of this study. Provision of dental care products to the teachers and participant students as a token of appreciation probably helped a lot.

6.2. The questionnaire used

The questionnaire used in this study was developed based on our study aims and objectives. Both open-ended and close-ended questions were included in our questionnaire, with the majority being close-ended questions so that the respondents might find it easier to complete the questionnaire and that it was easier for us to analyze the data in a standardized way. The introduction of some open-ended questions allowed us to obtain some important information which otherwise would be difficult to obtain, for example by asking about the reasons for their last dental visit, we could find out whether parents who visited a dentist for preventive dental care would be willing to do the same for their child.

To investigate the parents' WTP for dental care service for their child, we devised three dental care plans consisting of increasing amounts of treatment items. This approach has a number of advantages. First, since it is difficult for the parents to assess the value of each individual dental service item, it is better to group the service items into a dental plan so that it is easier for the parents to comprehend. Second, this approach allows a price range to be developed for each dental plan which helps us to assess the parents' WTP values. Third, the components of the dental care plans have an additive effect on the maintenance and promotion of good oral health and should not be assessed in isolation.

6.3. The main findings

It was found that the Form 5 students were more likely to have had visited a dentist after entering secondary school than the Form 2 students. This is likely because the Form 2 students had just left the SDCS whilst the Form 5 students had left the SCDS for three more years. This finding is what we had expected and is a reason why a range of dental plans were offered to the parents to choose because the students had different dental visit behaviours and may be different dental care needs.

Most of the parents in this survey thought that preventive dental care was very important. Furthermore, this belief was commonly held by parents of different socio-economic background. Although the parents' education and income level did not affect their attitude towards the importance of regular dental care for their child, the parents' background affected their child's dental visit behaviour. It was found that students from lower income families were less likely to have visited a dentist after entering secondary school. This may be taken to indicate that cost is a barrier for the students' access to dental care which is in agreement with the findings of other studies.[9] Therefore, when promoting utilization of dental care services among the secondary school students in Hong Kong emphasis should be placed on subsidizing the low income parents rather than trying to raise the parents' attitude towards preventive dental care.

When asked which dental service items should be included in a dental plan for secondary school students, most of the parents in this study chose preventive care and dental filling while only one third of them chose to include tooth extraction. This is consistent with the finding that the parents thought preventive dental care was very important. The parents place emphasis on preventive dental care but the importance of oral health education seems to be undervalued as only half of the parents chose to include this service in the dental plan.

Among the three dental plans we proposed in the questionnaire, most parents put Plan C, the most comprehensive one, as their first choice and this preference was not affected by their income level. This is understandable as it can be expected that most people will prefer a dental plan which includes more service items when price is not a consideration. However, the monetary amount which the parents were willing to pay was dependent on their income. The higher income parents were willing to pay more than that of the lower income parents for the same dental plan. The median WTP value for Plan C ($270) might not be acceptable to the dental care service providers in Hong Kong. As a compromise, Plan B with its contents similar to those of Plan C but without dental filling and tooth extraction and a median WTP value ($214) not much lower than that of Plan C can be considered as a viable alternative. Further studies are needed to find the lowest fees which the private dentists in Hong Kong are willing to charge for the three different dental plans. It is important to find out if how large is the gap, if any, between the consumers and providers in setting the fees for the dental plans.

7. CONCLUSIONS

Our community health project is just a small scale study on the parents of secondary school students in Hong Kong and there are a number of methodological limitations. It can only be regarded as a pilot study on the parents' willingness to pay for basic dental care services for their children. Despite these, based on the results of our study and with reference to the study objectives, we would like to draw the following conclusions.

1. Most of the parents of secondary school children in Hong Kong in the different socioeconomic groups consider preventive dental care very important.

2. The parents' most preferred dental care plan for their children is one that contains both preventive and simple restorative care items, and their preference is not affected by their socio-economic background.

3. Most of the parents are willing to pay HK$151 – 450 for their most preferred dental care plan for their children.

4. The monetary values which the parents are willing to pay for a dental care plan increases with the number of dental service items included in the plan and also with the parents' income.

8. RECOMMENDATIONS

We are happy to see that most of the parents of secondary school students in Hong Kong consider dental health as important and believe that their children need to have regular dental check-ups. Yet, factors such as financial barrier and the self-perception of "no need for regular dental visits" hinder quite a proportion of the parents from bringing their child to visit a dentist regularly for necessary dental care. To promote the dental visit behavior and oral health of secondary school students, there is a need to provide a prevention-focused dental care programme for the students. In relation to this, we would like to make the following suggestions on how the dental care program may be organized.

1. Government can extend the SDCS to cover the secondary school students but the content and fee of the service for secondary school students can be different from those of the current SCDS for primary school students.

2. Private dentists and dental clinics of non-governmental organizations (NGO) can provide dental care plans for secondary school students. These may be in the form of:
    - one standard plan with regular check-up, prevention and dental restoration for all secondary school students, with possible subsidy from the government to lower the programme fee; or
    - a number of dental plans with different contents and fees for the consumers to choose, and the fees are to be paid by the consumers according to their choices.

Although there may still be a long way for a dental care programme for the secondary school students in Hong Kong to become a reality, further work from different parties concerned will make this goal achievable. We hope this report will provide some information for the future development of this programme.

9. ACKNOWLEDGEMENTS

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Appendix 1

Questionnaire used in the survey

學生家長/監護人：

我們是香港大學牙醫學院四年級學生，在老師指導下現正展開一項本港中學生家長的問卷調查。此調查旨在了解中學生及家長對接受預防性牙科服務的情況及態度, 從而為日後改善中學生口腔健康作出建議。

最近的研究顯示香港的中學生在不能參加學童牙科服務的情況下，他們的口腔健康情況有每況愈下的趨勢。由於大部分恒齒剛好萌出，所以十二至十八歲是接受預防性牙科服務的黃金時間，但香港並沒有提供針對這個年齡層的公共牙科服務。我們想藉此機會研究中學生家長對支付青少年預防性牙科治療（包括口腔檢查、口腔健康教育、洗牙、蛀牙預防如塗上氟化物和牙紋防蛀劑）的意願，以及對預防性牙科服務的態度。

參與這項研究是屬於自願性質的，您可選擇不參與。參加問卷調查者將會獲得與牙齒護理相關的紀念品套裝一份。
如果您對參與這項研究有任何疑問，可致電與我們的學生代表汪睿〔電話 9684 2102〕或導師盧展民教授〔電話 2859 0292〕查詢。

汪睿　　盧展民教授
二零一四 年 二月 四日

Dear Parent/Guardian,

We are a group of fourth year dental students and, under the supervision of our teachers, we are conducting a questionnaire survey on the attitudes of secondary school students' and their parents' behaviours and attitudes towards receiving preventive dental care services.

Recent studies found that there has been deterioration in the oral health conditions of secondary school students in Hong Kong when they are no longer eligible for the School Dental Care Service. Teenagers between 12 and 18 years old are at an optimum age for preventive dental care as most of their permanent teeth have recently erupted. However, there is no public preventive dental care service for them. We would like to investigate parents' attitude towards and willingness to pay for preventive dental care services (including check-up, oral health education, tooth cleaning, fluoride application and fissure sealant) designed for the adolescents.

Participation in this survey is completely voluntary and you can choose not to participate. A dental care product will be given as a souvenir to survey participant. The collected data will be kept confidential and used by the researchers only. If you have any enquiry, you can contact our student representative Crystal Wang (phone: 9684 2102) or our teacher Prof. Edward Lo (phone: 2859 0292).

A. *基本資料　Basic information*

1. 請問你的子女正在就讀甚麼年級？　Which form is your child studying in?

☐ 中二 Form 2　　☐ 中五 Form 5

2. 請問你的子女的性別是：　Gender of your child:

☐ 男 Male　　☐ 女 Female

3. 父親或母親之最高學歷：　Highest education level of either parent:

☐ 中七或以下 F.7 or below　☐ 大專程度 Post-secondary　☐ 大學學位 U. degree

4. 家庭每月收入：　Monthly household income level:

☐ ≤ $20,000　　☐ $ 20,001 - $ 40,000　　☐ ≥ $ 40,001

B. *子女看牙醫的習慣 Dental Visit Behaviour of Child*

5. 請問你的子女在升上中學後有否看過牙醫？
Has your child visited a dentist after he/she entered secondary school?

☐ 有 Yes　(去 go to Q5a)　　☐ 沒有 No　(去 go to Q5b)

5a. 如果有，請問最近一次是基於甚麼原因？(可選多項原因)
If yes, what are the reasons for the most recent dental visit? (Multiple reasons allowed)

☐ 口腔檢查 Check-up　☐ 洗牙 Cleaning　☐ 蛀牙預防 Decay prevention
☐ 補牙 Fillings　☐ 脫牙 Tooth extraction　☐ 其他 Others：_____

5b. 如果沒有，請問是其麼原因？(可選多項原因)
If not, why?　(Multiple reasons allowed)

☐ 太昂貴 Too expensive　☐ 沒有時間 No time　☐ 沒有需要 No need
☐ 其他 Others：_____

6. 請問你認為你的子女需要定期看牙醫嗎？
Do you think your child needs to visit the dentist regularly?

☐ 不需要 No　☐ 需要，兩年一次 Once/2 years
☐ 需要，一年一次 Once/year　☐ 需要，一年兩次 Twice/year
☐ 需要，多於一年兩次 More than twice a year

C. *家長看牙醫的習慣 Dental Visit Behaviour of Parents*

7. 請問你在過往 12 個月期間有否看過牙醫？
Have you visited a dentist in the past 12 months?

☐ 有 Yes (去 go to Q7a) ☐ 沒有 No (去 go to Q7b)

7a. 如果有，請問最近一次是基於甚麼原因？(可選多項原因)
If yes, what are the reasons for the most recent dental visit? (Multiple reasons allowed)

☐ 口腔檢查 Check-up ☐ 洗牙 Cleaning ☐ 蛀牙預防 Decay prevention
☐ 補牙 Fillings ☐ 脫牙 Tooth extraction ☐ 其他 Others：_____

7b. 如果沒有，請問是其麼原因？(可選多項原因)
If not, why? (Multiple reasons allowed)

☐ 太昂貴 Too expensive ☐ 沒有時間 No time ☐ 沒有需要 No need
☐ 其他 Others：_____

8. 請問你有定期看牙醫嗎？
Do you visit the dentist regularly?

☐ 沒有 No ☐ 有，兩年一次 Once/2 years
☐ 有，一年一次 Once/year ☐ 有，一年兩次 Twice/year
☐ 有，多於一年兩次 More than twice a year

D. *預防性牙科服務 Preventive Dental Care*

預防性牙科服務泛指用以預防口腔疾病為目的的牙科服務，包括定期口腔檢查、口腔健康教育、洗牙、塗上氟化物和牙紋防蛀劑等。

有些牙齒的紋溝既深且窄，不易清潔所以較為容易蛀壞。牙紋防蛀劑是一種牙科物料，注入牙紋後能夠與牙齒粘合，從而填封紋溝，減少蛀牙的機會。
氟化物劑通常塗於牙齒表面，可以強化琺瑯質，能夠有效預防蛀牙。

Preventive dental care refers to dental service items which aim to prevent oral diseases, including regular check-up, oral health education, dental scaling, application of fluoride and fissure sealant etc.
Deep and narrow fissures are present on some teeth. They are difficult to clean and prone to tooth decay. Fissure sealant is a dental material which can fill up and bond to fissures on teeth, reducing the chance of tooth decay.
Fluoride is usually applied on tooth surface which can strengthen enamel, effectively preventing tooth decay.

你認為一個香港中學生牙科服務計劃應該包括甚麼項目？ (可選多項)

Which item(s) do you think should be included in a dental care plan for Hong Kong secondary school students? (Multiple items allowed)

☐ 口腔檢查 Check-up
☐ 口腔衛生教育 Oral health education
☐ 氟化物劑 Fluorides
☐ 牙紋防蛀劑 Fissure sealant
☐ 洗牙 Cleaning
☐ 補牙 Dental fillings
☐ 脫牙 Tooth extraction
☐ 其他 Others：_____

9. 你認為預防性牙科服務有多重要？ (1 分為最不重要，10 分為最重要)

How important do you place on preventive dental care on a scale of 1-10, with 1 as the least important and 10 as the most important?

分數 Score: _____ 分

10. 請根據你個人喜好，替以下三個中學生牙科服務計劃作出排名：

Please rank the following 3 preventive dental care plans in order of preferences:

計劃	計劃包括的牙科項目
A	口腔檢查 (包含需要的 X 光片); 口腔衛生教育 Check-up (with necessary radiographs); Oral health education
B	口腔檢查 (包含需要的 X 光片); 口腔衛生教育; 洗牙; 氟化物劑; 牙紋防蛀劑 Check-up (with necessary radiographs); Oral health education; Cleaning; Fluoride application; Fissure sealant
C	口腔檢查 (包含需要的 X 光片); 口腔衛生教育; 洗牙; 氟化物劑; 牙紋防蛀劑; 補牙; 脫牙 Check-up (with necessary radiographs); Oral health education; Cleaning; Fluoride application; Fissure sealant; Dental filling; Tooth extraction

第一選擇 First choice: _____

第二選擇 Second choice: _____

第三選擇 Third choice: _____

11. 如果你的子女可以參與 A 計劃，請問你願意支付多少錢?

If your child is eligible to join Plan A, how much are you willing to pay?

☐ ≤ $150 ☐ $151 - $300 ☐ $301 - $450 ☐ $451 - $600 ☐ ≥ $601

12. 如果你的子女可以參與 B 計劃，請問你願意支付多少錢?

If your child is eligible to join Plan B, how much are you willing to pay?

☐ ≤ $150 ☐ $151 - $300 ☐ $301 - $450 ☐ $451 - $600 ☐ ≥ $601

13. 如果你的子女可以參與 C 計劃，請問你願意支付多少錢?

If your child is eligible to join Plan C, how much are you willing to pay?

☐ ≤ $150 ☐ $151 - $300 ☐ $301 - $450 ☐ $451 - $600 ☐ ≥ $601

Appendix 2

List of participating schools

- Hong Kong True Light College 香港真光書院
- Pui Kiu Middle School 培僑中學
- SKH All Saints' Middle School 聖公會諸聖中學
- Ho Man Tin Government Secondary School 何文田官立中學
- The Y.W.C.A. Hioe Tjo Yoeng College 基督教女青年會丘佐榮中學
- YLPMSAA Tang Siu Tong Secondary School 元朗公立中學校友會鄧兆棠中學
- Carmel Pak U Secondary School 迦密柏雨中學
- San Wui Commercial Society Secondary School 新會商會中學